



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES**

**Revision Number: 1**

## TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES

### Modification History

Not applicable.

### Unit Descriptor

UNIT DESCRIPTOR:

**This unit involves the skills and knowledge required to establish and maintain bridge and engine room watchkeeping arrangements in compliance with Australian and international regulations and guidelines to ensure the safety of navigation, protection of the marine environment and the safety of an ocean going commercial vessel and persons on board.**

### Application of the Unit

<b>Application of the unit</b>	The unit covers requirements for the management of bridge and engine room watchkeeping arrangements on an ocean-going commercial vessel and has applications in qualifications for Master (Unlimited), i.e. Advanced Diploma of Transport&Distribution(Maritime Operations - Master Unlimited) and Chief Engineers, i.e. Advanced Diploma of Transport&Distribution(Marine Engineering Class 1) and Advanced Diploma of Transport&Distribution(Marine Engineering Class 2)
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## Licensing/Regulatory Information

<b>Licensing/legislative requirements</b>	The unit is consistent with the relevant maritime requirements for the management of bridge and engine room watchkeeping arrangements on an ocean-going commercial vessel. This includes applicable sections of STCW 95 and AMSA certification and regulatory requirements under Marine Orders Part 3, Seagoing Qualifications, Issue 6.
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## Pre-Requisites

Not applicable.

## Employability Skills Information

Not applicable.

## Elements and Performance Criteria Pre-Content

<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.</i>
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<b>1 Establish bridge/engine room working systems and procedures</b>	<ul style="list-style-type: none"> <li>a Watchkeeping arrangements and procedures are established as required by AMSA Marine Orders and company procedures taking into account relevant factors</li> <li>b The principles of bridge resource management (BRM) are appropriately applied in the establishment of watchkeeping arrangements and procedures and the development of an effective bridge working system</li> <li>c Composition of the watch is determined in accordance with the principles set out in AMSA Marine Orders</li> <li>d Bridge/engine room working systems is documented as required and communicated to bridge or engine room</li> </ul>

ELEMENT	PERFORMANCE CRITERIA
	personnel
ELEMENT	PERFORMANCE CRITERIA
<b>2 Manage the bridge/engine room teams</b>	<ul style="list-style-type: none"> <li>a The current competency of personnel is evaluated and appropriate measures are taken to ensure all personnel have the required level of competency</li> <li>b Personnel are assigned in accordance with their assessed level of current competency and experience and established bridge or engine room watchkeeping requirements</li> <li>c Watchkeeping arrangements and procedures and are explained to assigned watch officers and other bridge or engine room personnel, and their duties and responsibilities confirmed</li> <li>d Fatigue management strategies are applied within the bridge/engine room management team</li> <li>e Watchkeeping operations are monitored and appropriate action is taken where they are found to be in breach of established arrangements, regulations and procedures</li> </ul>

## **Required Skills and Knowledge**

### **REQUIRED KNOWLEDGE**

This describes the knowledge required for this unit.

- 1 Sections of IMO STCW Convention and Codes and AMSA Marine Orders dealing with watchkeeping principles, arrangements, procedures, roles and responsibilities
- 2 Relevant OH&S legislation and policies
- 3 bridge resource management systems
- 4 Implications of a range of factors that can affect watchkeeping functions and the composition of the bridge engine room management team
- 5 Causes of groundings, collisions and casualties when on board a vessel
- 6 Navigational hazards and implications for watchkeeping
- 7 Operating procedures for typical navigational aids and skills and knowledge needed to use them effectively
- 8 Watch handover procedures
- 9 Bridge instrumentation, controls and alarms
- 10 Functions of unmanned machinery space (UMS) controls, alarms and indicators
- 11 Ways of assessing the current competency of the vessel's officers and crew and their familiarity with the vessel's equipment, procedures, and manoeuvring capability
- 12 Rudder and propeller control and vessel manoeuvring characteristics
- 13 Precautions necessary when navigating in or near traffic separation schemes or other routeing measures
- 14 Signs of fatigue
- 15 Fatigue management principles and techniques
- 16 Maritime communication techniques

### **REQUIRED SKILLS**

## REQUIRED SKILLS

*This describes the basic skills required for this unit.*

- 1 Communicate effectively with others on watchkeeping issues, arrangements and requirements
- 2 Read, interpret and apply instructions, procedures and information relevant to watchkeeping procedures and responsibilities
- 3 Establish and maintain appropriate internal and external communication systems
- 4 Use management skills effectively
- 5 Recognise and interpret signs of fatigue among bridge team and initiate appropriate action
- 6 Conduct meetings of bridge team
- 7 Demonstrate effective leadership of the bridge or engine room watchkeeping team on a vessel
- 8 Plan and organise watchkeeping arrangements on board a vessel
- 9 Motivate watchkeeping personnel
- 10 Investigate and arbitrate shipboard conflicts
- 11 Promote adherence to watchkeeping principles
- 12 Maintain a vessel's security plan
- 13 Assist bridge team members to develop and maintain the required level of competency
- 14 Monitor watchkeeping arrangements and take appropriate action where there is an identified breach of established arrangements, regulations or procedures

## Evidence Guide

### Evidence Guide

### TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES

*The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.*

<p><b>1 Critical aspects of evidence required to demonstrate competency in this unit</b></p>	<p>Assessment must confirm appropriate knowledge and skills to:</p> <ul style="list-style-type: none"> <li>a Establish watchkeeping arrangements and procedures</li> <li>b Assign watchkeeping responsibilities</li> <li>c Assess current competency of bridge or engine room personnel in terms of their watchkeeping roles and responsibilities</li> <li>d Monitor watchkeeping procedures</li> </ul> <p>Communicate effectively with others about watchkeeping arrangements</p>
<p><b>2 Evidence required for demonstration of consistent performance</b></p>	<ul style="list-style-type: none"> <li>a Performance is demonstrated consistently over a period of time and in a suitable range of contexts</li> <li>b Consistently applies underpinning knowledge and skills when:             <ul style="list-style-type: none"> <li>1 establishing and monitoring watchkeeping arrangements</li> <li>2 identifying and evaluating bridge or engine room management problems and determining appropriate courses of action</li> <li>3 identifying and implementing improvements to bridge or engine room management procedures</li> <li>4 applying safety precautions relevant to watchkeeping operations</li> <li>5 assessing competency and experience of vessel's officers and crew and their suitability for watchkeeping roles</li> </ul> </li> </ul>

**Evidence Guide**

**TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES**

- c Shows evidence of application of relevant workplace procedures, including:
  - 1 relevant sections of maritime regulations
  - 2 vessel's safety management system and procedures
  - 3 OH&S regulations and hazard prevention policies and procedures
  - 4 job procedures and work instructions
  - 5 relevant guidelines relating to bridge or engine room management and watchkeeping arrangements on board a vessel
  - 6 security procedures
  - 7 following bridge and engine room housekeeping processes
- d Action is taken promptly to report and/or rectify watchkeeping incidents in accordance with established procedures

**Evidence Guide (continued)**

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<p><b>2 Evidence required for demonstration of consistent performance (continued)</b></p>	<ul style="list-style-type: none"> <li>e Work is completed systematically with required attention to detail</li> <li>f Recognises and adapts appropriately to cultural differences in the workplace, including modes of behaviour and interactions between crew and others</li> </ul>
<p><b>3 Context of assessment</b></p>	<ul style="list-style-type: none"> <li>a Assessment of competency must comply with the assessment requirements of the relevant maritime regulations</li> <li>b Assessment of this unit must be undertaken within relevant</li> </ul>



**Evidence Guide (continued)**

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	<p>marine authority approved and audited arrangements by a registered training organisation:</p> <ol style="list-style-type: none"> <li>1 As a minimum, assessment of knowledge must be conducted through appropriate written/oral examinations, and</li> <li>2 Appropriate practical assessment must occur:             <ol style="list-style-type: none"> <li>i at the registered training organisation; and/or</li> <li>ii on an appropriate working or training vessel</li> </ol> </li> </ol>
<p><b>4 Specific resources required for assessment</b></p>	<p>Access is required to opportunities to:</p> <ol style="list-style-type: none"> <li>a demonstrate the ability to establish and manage watchkeeping arrangements through a range of case studies, exercises and assignments that suitably simulate a range of watchkeeping situations; and/or</li> <li>b establish and manage the watchkeeping arrangements on an operational commercial vessel in an appropriate range of contexts</li> </ol>

**Range Statement**

**Range Statement**

**TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES**

*The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.*

**VARIABLE**

**SCOPE**

**1. GENERAL CONTEXT**

<p><b>Range Statement</b></p> <p><b>TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES</b></p>	
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<p><b>a. Work must be carried out:</b></p>	<p>1 in compliance with relevant maritime regulations</p>
<p><b>b. Work is performed:</b></p>	<p>1 independently under broad operational requirements, with accountability and responsibility for self and others in achieving the prescribed outcomes</p>
<p><b>c. Work involves:</b></p>	<p>1 the application of a significant range of fundamental nautical principles and complex manoeuvring techniques across a wide and often unpredictable variety of operational contexts. Planning, establishment and maintenance of watchkeeping arrangements is required. Accountability and responsibility for self and others in achieving the required watchkeeping functions is involved</p>
<p><b>d. Work requires:</b></p>	<p>1 significant judgement in planning, organisational and leadership functions related to the establishment of watchkeeping arrangements and procedures for commercial vessels</p>

**2. WORKSITE ENVIRONMENT**

<p><b>a Vessel may include:</b></p>	<p>1 any Australian or international commercial vessel of unlimited tonnage or propulsion power</p>
<p><b>b Watchkeeping arrangements and procedures may be implemented:</b></p>	<p>1 by day or night in both normal and emergency situations</p> <p>2 under any possible conditions of weather and loading</p> <p>3 while underway</p> <p>4 during berthing and unberthing operations</p> <p>5 while anchoring or mooring</p>

**Range Statement**

**TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES**

- 6 while in port
- 7 while moored or at anchor

**Range Statement (continued)**

**TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES**

<b>VARIABLE</b>	<b>SCOPE</b>
<b>b Watchkeeping arrangements and procedures may be implemented: (continued)</b>	<ul style="list-style-type: none"> <li>8 when bunkering</li> <li>9 during cargo operations</li> </ul>
<b>c Watchkeeping includes:</b>	<ul style="list-style-type: none"> <li>1 both bridge and engine room watchkeeping duties</li> </ul>
<b>d Watchkeeping principles (as described in the AMSA Marine Orders) include:</b>	<ul style="list-style-type: none"> <li>1 proper lookout must be maintained at all times</li> <li>2 duties of look-out and helmsman must be kept separate</li> <li>3 look-out must give full attention to keeping a proper look-out and must not be given other duties which could interfere with the task</li> <li>4 all necessary precautions must be taken to avoid pollution of the marine environment</li> <li>5 assistance must be available to be summoned to the bridge or engine room if required by a change in the vessel's situation</li> </ul>

**Range Statement (continued)**

**TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES**

<p><b>e Fatigue management strategies may include:</b></p>	<ol style="list-style-type: none"> <li>1 recognition of symptoms of fatigue</li> <li>2 arranging to take a break when symptoms of fatigue are identified</li> <li>3 maintenance of personal fitness and health</li> <li>4 appropriate dietary habits</li> <li>5 avoidance of excessive consumption of alcohol prior to watchkeeping duties</li> </ol>
<p><b>f Factors to be taken into account when establishing watchkeeping arrangements include:</b></p>	<ol style="list-style-type: none"> <li>1 bridge or engine room must never be left unattended</li> <li>2 weather and sea conditions, visibility and whether there is daylight or darkness</li> <li>3 proximity of navigational hazards</li> <li>4 use and operational condition of navigational aids</li> <li>5 operational status of bridge/engine room instrumentation, controls and alarms</li> <li>6 whether the vessel is fitted with an automatic steering system</li> <li>7 whether there are radio duties to be performed</li> <li>8 provision of unmanned machinery space (UMS) controls, alarms and indicators</li> </ol>

**Range Statement (continued)**

**TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES**

<b>VARIABLE</b>	<b>SCOPE</b>
<p><b>f Factors to be taken into account when establishing watchkeeping arrangements include:</b> <b>(continued)</b></p>	<p>9 unusual demands on the watch arising from operational conditions</p> <p>10 traffic density and other activities occurring in the area in which the vessel is navigating</p> <p>11 the size of the vessel and the field of vision available from the conning position</p> <p>12 the attention necessary when navigating in or near traffic separation schemes or other routeing measures</p> <p>13 the professional competency and experience of the vessel's officers and crew and their familiarity with the vessel's equipment, procedures, and manoeuvring capability</p> <p>14 the fitness for duty of any crew members on call who are assigned as members of the watch</p> <p>15 rudder and propeller control and vessel manoeuvring characteristics</p> <p>16 the additional workload caused by the nature of the vessel's functions, immediate operating requirements and anticipated manoeuvres</p>
<p><b>g Available navigational aids may include:</b></p>	<p>1 radar</p> <p>2 electronic position indicating devices</p> <p>3 other bridge equipment affecting the safe navigation of the vessel</p>

**Range Statement (continued)**

**TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES**

<b>h Documentation /records may include:</b>	1	ISM Code safety management system plans, procedures, checklists and instructions
	2	operational orders
	3	navigational charts
	4	IMO STCW 95 Convention and Code
	5	AMSA Marine Orders
	6	ICSBridge Procedures Guide
	7	vessel's log
	8	company procedures
	9	instructions of relevant maritime authorities
	10	pilot instructions where relevant
	11	relevant Australian and international standards

**Range Statement (continued)**

**TDMMF2607B ESTABLISH WATCHKEEPING ARRANGEMENTS AND PROCEDURES**

<b>VARIABLE</b>	<b>SCOPE</b>
<b>i Applicable procedures and codes may include:</b>	1 relevant sections of the IMO STCW 95 Convention and Code
	2 relevant sections of AMSA Marine Orders
	3 ISM Code
	4 International Regulations for Preventing Collisions at Sea
	5 relevant international, Commonwealth, State and Territory OH&S legislation

## Unit Sector(s)

Not applicable.

## Field

Field MF Operational Quality and Safety

## Relationship to other units

<b>Relationship to other units</b>	The unit may be assessed in conjunction with other units that relate to the functions of the occupation(s) concerned.
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